1: *Hum Reprod* 2000 Jun;15(6):1314-21

Lack of association between smoking and DNA fragmentation in the spermatozoa of normal men.

Sergerie M, Ouhilal S, Bissonnette F, Brodeur J, Bleau G

Andrology Laboratory, Centre hospitalier de l'Universite de Montreal (CHUM) - Hopital Saint-Luc, Quebec, Canada.

Male factor infertility patients can have anomalies in their sperm nuclei, displaying high levels of loosely packaged chromatin and damaged DNA. The primary objectives of this study were to compare the extent of DNA fragmentation in the spermatozoa of healthy light and heavy smokers versus non-smokers, and to investigate its correlation with concentrations of the smoking markers cotinine and cadmium. A secondary objective was to compare the concentrations of blood cadmium and serum cotinine with corresponding concentrations in seminal plasma. Ninety-seven healthy male volunteers were divided into three groups: non-smokers, light and heavy smokers. There was no difference between the three groups with respect to age, number of ejaculations per week, serum testosterone concentration, and parameters of semen analysis. The percentages of DNA fragmentation in spermatozoa were not statistically different in the heavy smokers (12.11%), light smokers (11.66%) and non-smokers (20.41%). Serum and seminal plasma concentrations of cotinine were significantly higher in heavy smokers compared with the other groups ($P < 0.0001$). Median values for blood cadmium concentration were higher in heavy smokers (4.50 microg/l) than in light smokers (0.20 microg/l) and non-smokers (0.20 microg/l) ($P < 0.001$). Cadmium concentration in seminal plasma was significantly higher in heavy smokers (0.20 microg/l) than in light smokers (0.10 microg/l) and non-smokers (0. 10 microg/l) ($P < 0.05$). In summary, our results indicate no association between smoking and DNA fragmentation in the spermatozoa of healthy men.

PMID: 10831562, UI: 20293232

PM3001192669